



**DE 44**

**A COMMUNITY RESEARCH POLICY  
FOR DEVELOPMENT**

X/114/83

March 1983

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## A COMMUNITY RESEARCH POLICY FOR DEVELOPMENT

The development aid policy is one of the initiatives which has enabled the European Community to assert itself at international level. But the results have not always reflected the effort put into it, in particular because the satisfaction of essential short-term needs has tended to monopolize priorities to the detriment of initiatives whose effects are only felt in the long term. This is not just the case of the European Community - the two international development decades were not more satisfactory either.

It has to be realized that the means brought to bear as part of the Community agreements and conventions have helped push up the average per capita income and, generally speaking, food production in certain parts of the developing world. However, in view of the complexity of the task - which is made worse both by the sort of demographic growth that is likely to cancel out any progress and by the world economic crisis - the Community felt the need to reflect on the matter and try to define a new development aid strategy that would pave the way for the future as well as meet immediate needs.

The outcome was a document presented by Edgard Pisani, the European Commissioner responsible for Community development policy, which was approved by the Commission in September 1982. Some of the keynotes - multiannual periods, contractuality, a priority aim of self-centred, self-sustaining development and priority on meeting food requirements - are worth remembering. We shall see the meaning and the whole political significance of these later.

The considerable support which the European Parliament gave to the new solutions put forward in the Pisani Memorandum underlines the importance of the debate.

The approach in development aid over the past two decades was a primarily economic and social one. The new strategy aims to be able to wage the battle on a much broader front, where scientific and technical research geared to the specific problems of the tropics and sub-tropics will be integrated into the development process.

With this in view, the European Community has just adopted a special research programme for the developing countries. It involves a total sum of 40 000 000 ECU (1 ECU = approximately \$ 1 at the present time), to be spread over four years, and consists of two sub-programmes on tropical agriculture and medicine, health and nutrition in the tropics. The funds are intended to finance existing institutes in the Member States of the EEC as well as those laboratories and research workers

in the developing countries that are associated with their work. The programmes are based on the ideas of dialogue and contractuality which the Community henceforth intends to be the foundation for its development aid schemes.

It would of course have been desirable for the scientific and technical research largely to be carried out in the developing countries themselves. But the establishment of a research structure in the new countries is a lengthy business and has to be done methodically. "The immediate question is whether the developing countries are able to raise the financial means, whether they have the right capacity and whether they have the physical instruments, the instruments to organize research, the laboratories, and whether they already have research workers who are able to form research units and tackle the reality which is theirs. The answer, alas, is no." Commissioner Edgard Pisani said this to the European Parliament in May 1982 during a debate in which he presented this first Commission proposal on research for the benefit of the developing countries. But, at the same time, he undertook... "to table a further proposal with the precise aim of boosting the autonomous research capacity of the partner countries...". So, although initially it is vital for them to benefit from research carried out jointly by institutes in the Community and in the developing countries, at a second stage, the developing countries will be in a position to devise their own research systems.

The proposal was adopted by the Council of Ministers on 3 December 1982 and the Commission's commitment was fulfilled by presentation to the Council of a communication on a European scientific and technical strategy (framework programme 1984-87) in which strengthening scientific development aid will be an important feature in the years to come.

#### The Council Decision

The programme which the EEC Council of Ministers adopted, at the European Commission's suggestion, on 3 December 1982 (Official Journal of the European Communities n° L 352 of 14 December 1982) covers a four-year period beginning on 1 January 1983. The aim, according to Article I is to "support and reinforce the scientific activities in the field of science and technology for development...". This Article also states that it could be "extended after thorough assessment, together with the financial arrangements".

The most important part of the Decision provides the possibility of both the institutes in the Member States of the EEC and the research and development institutes in the developing countries acceding to financing. The proposals they present must have the support of those developing countries concerned. Such proposals may be for research actions cofinanced with other international organizations.

The funds for the programme amount to 40 000 000 ECU, to include expenditure on nine staff to manage it (Article 2).

As to management, the EC Commission will ensure execution of the programme with the help of two advisory committees on programme management (Article 3). Developing country representatives may sit on management committees and representatives of the relevant international organizations may attend the meetings.

Lastly, research actions will be run in tropical agriculture and in medicine, health and nutrition in the tropics. A detailed description of all the sub-sectors is also given in this publication.

#### After independence, tropical research declined...

A short historical outline is required for a proper grasp of the scope and originality of the Community decision.

The systematic attempts at international level to make research serve the interests of growth in the developing countries goes back to the early seventies, so it is a very recent thing. Before that, most of these countries were linked politically to certain of the countries of Europe. Most of them were in the tropics and sub-tropics and they had a number of specific problems - tropical diseases in man and in animals and little information about their soil, their mineral resources, their climate and their vegetation, to name but a few. This is why the European powers concerned had long since set up institutes to tackle the problems and, in particular, to inventory the resources of these countries and investigate certain medical, biological and social factors that prevented large-scale exploitation of the resources. The "colonial pact", however, overlooked a large number of aspects that would have needed to be taken into account if these countries were to have properly balanced economic development. In particular, it was not known to what extent research and development could help generate self-centred, self-sustaining economic and social progress in the developing countries.

After these countries became independent, the European countries' interest in a strong tropical research structure was not so immediate. Although most of the research bodies continues to function, in certain Member States of the Community, these worthy institutions declined. In some cases, credit restrictions cut the programmes back and, above all, young research workers were less attracted to branches which did not offer such a bright future. France, for example, continued to shoulder its responsibilities in Africa and the UK fulfilled its obligations vis-à-vis the Commonwealth.

... and the developing countries were unable to take it over

The newly independent countries, faced with many priorities, were unable to take over the work of the ex-colonial powers. There were a number of reasons for this. The urgency of meeting certain immediate needs meant that the governments of the developing countries rarely appreciated the role that research and development, which bring long-term results, could play in their development. In many cases, they were in no position to choose the technology that was best-suited to their needs or get a proper idea of the problems that research might have been called on to solve. And even if they had, the scientific and technical infrastructure in many of them was inadequate to get the best out of imported techniques. And the educational and cultural systems had not prepared their populations to use this technology from elsewhere either.

#### International cooperation in research and development

Certain international actions were undertaken to bridge the gap. Within the UN system, specialized institutions such as the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) have often obtained remarkable results. But the best-known and most effective body is the Consultative Group on International Agricultural Research (CGIAR). The CGIAR, a World Bank creation, is a system in which a large number of donor countries participate and it supports 13 research centres, most of which are in the developing countries. It has achieved important scientific results and made it possible for them to be disseminated in the developing countries. The international theoretical physics centre in Trieste is another example of the sort of international cooperation that is profitable to the developing countries.

The European Community has not been wanting in the drive to help the developing countries with research and development. However, in the early days of its global development aid policy, it was forced to put priority on the most urgent problems, in spite of the fact that it was well aware of the role that research and development should play in the development of the Third World. This is why, in the regional agreements it has concluded with the ACP group (the African, Caribbean and Pacific countries which are members of the Lomé Convention) and the Mediterranean countries, research and development actions have tended to be used simply to boost policies in sectors such as agriculture and mining. The very nature of these contractual relations between the Community and its ACP and Mediterranean partners in fact leaves it only a small amount of initiative when it comes to launching research programmes.

The developing countries' recent awakening to the role of research and development in their economic and social future should breathe fresh life into international cooperation in this area.

An awakening in the seventies...

All international economic and political relations in developed and developing countries alike have undergone profound changes over the past decade.

The developing countries have realized that their claims, which were previously made to many separate international bodies, are linked and so called for global negotiations with the industrialized countries with a view to setting up a new international economic order. The Third World countries are full partners in the international community - which means equality and sovereignty in the sharing and management of natural resources, in the distribution of the benefits of growth and, lastly, in the accumulation of knowledge.

The Third World has become increasingly aware of the capital importance of science and technology in the economic and social development process. Feeling that scientific knowledge has remained the preserve of the industrialized countries, they have stated that science should be transmitted, without restrictions, throughout the world. However, although this is an attractive proposition from a philosophical point of view, in practice there are a number of major constraints which restrict its application.

... which led to the Vienna Programme

These general themes dominated the discussions of the second UN Conference on Science and Technology (UNCSTED) and profoundly marked the final concensus, the so-called Vienna Programme, which was adopted by the UN General Assembly in its resolution 34/218 of 23 January 1980.

The Vienna Programme, which is based on the idea that the resources and technological potential required to catch up the delay in the developing countries actually exist, has two main objectives. They are to:

- boost the scientific and technical means of the developing countries;
- restructure the present system of international relations in the field of science and technology.

This means that the Third World has to obtain its own research capacity for its own development and that, in the immediate future, the industrialized countries have to help it to do so.

Priority for the first objective is put on both the effort needed to set up coherent national scientific policies and the institutions responsible for implementing them and on the material and human means required to reach the point at which scientific research becomes effective.

For the second objective, on international cooperation proper, the Vienna Programme lays down three main elements:

- i availability to the international community of the results of the rich countries' research;
- ii a considerable increase in the effort the industrialized countries put in to researching solutions to scientific problems that are of priority interest to the developing countries;
- iii support by the developed countries and international organizations for the Third World's effort to create its own scientific potential and to train its own research workers and technicians.

This is the general framework within which the Community defines its research policy for development.

#### The European Community begins reflexion in 1976

But the EC did not wait for the Vienna Programme to start its reflexion on this subject. Back in 1976, the Scientific and Technical Research Committee (CREST), set up by the Member States of the Community the previous year, looked into the problem of scientific and technical cooperation with the developing countries in a specially created ad hoc group. The group made its report in 1977 and the Community bodies used it as a basis for their work. The programme just adopted incorporates the principal recommendations of the report, updating and expanding them in the light of the latest international data.

Within the Commission, reflexion was carried out in parallel by the directorates responsible for research and development and for development policy. This converged fully on the occasion of the major Community campaign to fight world hunger via the implementation of food strategies in the developing countries. In a resolution on EEC food aid to the developing countries in November 1980, the Community Council of Ministers itself had stressed the importance it attached to the development of research capacities geared, in particular, to agricultural food production in the developing countries and to the complementarity of the activities of research centres in the Community and the developing countries.

But although this aspect, to which we shall return later, is an important one, the food question is not the only subject likely to be covered by Community research and development actions.

#### The scientific sectors investigated

The need to define programmes at the point where the two Community policies converged - at the interface of the research



policy and the development aid policy - was the main guideline during the design phase.

The choice of the priority sectors for Community support quite naturally took two things into account:

- the need to privilege actions with an effect on as many people as possible in the developing countries;
- and, derived from this, the need to stress those sectors directly concerned with particularly serious and urgent problems, in this case those connected with the most essential needs of the developing countries.

In the light of these considerations, the following scientific sectors were examined:

1. The first, connected with the general problem of food, is research into improvements to food production in the broadest sense of the term, i.e. to include agriculture, herding, fishing, forestry and the techniques of capitalizing on agricultural products.
2. The second is health, research into transmissible tropical diseases and the attendant nutritional complaints.
3. The third is energy. In the poorest and landlocked countries, energy supplies have become an acute problem because of permanent difficulties with the balance of payments. One possible solution is to seek to diversify their energy sources.
4. The fourth and last is research that can contribute to developing the mineral wealth and the natural resources of the tropics.

The programme the Community adopted in December 1982 only covers the first two sectors - food and health.

What is the reason for a choice that seems to sacrifice the other two sectors, which are nonetheless essential to the development of the Third World?

Financially speaking, the amounts required to cover all the sectors were such that selection was called for, particularly since the research policy for the developing countries is something new and a running-in period is needed before envisaging larger-scale actions. It was also logical to favourize those fields which had directly to do with the tropics, which is why agriculture and health, which have special characteristics linked to climatic and ecological conditions and were not catered for by any specific activity at Community level, were selected. These two sectors are also the ones which have become most devitalized in the Member States and are therefore

in most need of reactivization, while in the developing countries, agronomical and medical research are the fields in which most has been invested and where cooperation with European laboratories will be most immediately forthcoming.

#### Complementarity with the aims of the Pisani Memorandum

The Commission memorandum on the Community's development policy, which Mr Pisani presented to the European Parliament in September 1982, is now the principal document when it comes to guiding Community action in this field. Why this initiative?

At a time when the Community has to take up the challenge of the economic crisis in the light of the prospect of enlargement to include more Mediterranean countries, reflexion on the achievements of its development policy was required to confirm and extend the aims in view and the geographical areas covered and to redefine the ways and means used. The deterioration of the economic situation of the poorest developing countries, often leading to a deterioration of their food situation, got the EP members moving on the subject of the war on world hunger. The role of Parliament was thus decisive in the adoption of the Community anti-hunger plan. Moreover, these debates took place during the run-up to the renewal of the Lomé Convention - which is still the main framework for the Community's relations with the developing world.

The memorandum proposes a series of targets, some of which are in perfect harmony with the actions laid down in the research programme presented by Viscount Davignon, who is in charge of the Community's research and development policy. It is true, as we have already underlined, that these two commissioners collaborated closely on the drafting of this programme, so the projected research actions can be immediately used to guide the EEC's development policy.

#### (1) Developing autonomous research capacities

One of the six aims which Community development policy should pursue in the eighties is the development of autonomous capacities for pure and practical research and the use of the whole of science and technology for development. It is clear that greater convergence of the policies would be desirable.

#### (2) Favourizing self-sufficiency in food

This is the big challenge of the last part of the century. The world has just woken up to the size and the urgency of the task of feeding 8 000 000 000 people in the year 2030. But in a good many of the poorest developing countries, per capita food production is on the decline. The galloping urbanization typical of all rapidly changing countries has led to the neglect of country areas and many farmers have given up producing more than is required to meet their own

or local needs, because prices are too low or input is in short supply. There is intolerable dependence on the rich countries as a result and the trend has to be reversed so the developing countries can be self-sufficient in food. There again, the international community has come up with scenarios likely to lead to the anticipated result. The European Commission, in particular in its memorandum, plans for the developing countries themselves to introduce food strategies. They will have the benefit of assistance from the Community and its Member States with defining these strategies and implementing the actions they involve. Favourizing self-sufficiency in food, which means providing support for the implementation of an active rural development policy and defining economic policies as an incentive to food production, is the other aim of the memorandum - which clearly coincides with the new programme of research for the developing countries.

Improving production, promoting rural areas, protecting and processing harvests, training scientists who are specialized in tropical agriculture - all these aspects of the agricultural part of the research programme are likely to encourage self-sufficiency in food in the developing countries as the memorandum hopes. Research into medicine, health and nutrition in the tropics must have an impact if human resources are to gain in social dynamism and energy independence.

#### Convergence with the new methods of cooperation with the developing countries

The Community research programme for the developing countries does not confine itself to being of considerable help to the new Community development policy. It also adopts certain of its principles, which will be regulating the Community's future relations with its partners of the Third World.

The memorandum on Community development policy specifies that, in its drive for development, the EC will seek channels for a political dialogue which goes behind a simple negotiation of the projects to be financed. The Community respects the recipient countries' sovereignty over the way the resources it provides are used, considering that it is its duty to establish a dialogue with the governments of these countries on the way to ensure the effectiveness of the policies it supports. Practical experiments with such a dialogue are already being run in the field of food strategies.

Dialogue and contractuality are now the keynotes of the Community's relations with the developing countries. Whereas hitherto it was content to finance projects it was only very partially involved in designing, the dialogue that should be set up under the forthcoming cooperation agreements and conventions will enable it to guide and orient the projects and programmes it is proposed. In the final analysis, the governments of the countries that receive Community aid are sovereign when it

comes to defining their priorities and deciding how to use the resources which the Community puts contractually at their disposal. But the Community establishes a dialogue with the governments on the effectiveness of the policies they ask it to support and on the relevance of them to the general aims of the Community development policy. This is what the memorandum says.

Yet things are clear. There can be no question of the Community interfering in the affairs of its partners. The idea, more simply, is for it to put its experience and its knowhow at the disposal of countries which do not always have the administrative or technical structures required to devise their policies and strategies. It should, as it were, be an adviser, but one which, as a provider of financing, is concerned with seeing that these monies are used as efficiently as possible for the development of the developing countries and that they go, above all, to the most underprivileged of their inhabitants. What, ultimately the Community is telling Third World partners is to "set up coherent actions, long-term ones if necessary and we shall help you by means of a dialogue and by means of our support. Undertake to respect the constraints inherent in your strategies and, in return, we undertake to guarantee you financial support throughout their implementation".

This dialogue is instituted by the research programme. Proposals for research actions presented by scientific bodies in the Community or the developing countries will have to have received the support of the developing countries concerned. These proposals will be discussed and then adopted or rejected by Advisory Committees on programme management (ACPM), in which the relevant developing country representatives are invited to participate. They will also participate in the practical implementation of the various aspects of the programme. This involvement of the developing countries through their specialists will also be used during the course of the programme for evaluations and any modifications. The regulation states that the length of the programme, which is a condition of the effectiveness of cooperation in research matters, can be extended, as can the financial arrangements, after thorough assessments have been made.

#### The programme in detail

The programme adopted consists of two sub-programmes covering, as we have seen, the sectors of tropical agriculture and of medicine, health and nutrition in the tropics.

The Community's scientific experts retained certain priorities from the detailed establishment of the programmes proposed by the Commission. These priorities are merely an indication. They can and must be modified and adapted to suit the opinions of the programme management committees, within the framework of the dialogue between the Commission and the European and developing country experts, in line with the characteristics and specific needs of each of the tropical regions concerned.

## A. Tropical agriculture - three sectors of research

In the policies to be emphasized in research into tropical agriculture, the Commission adopted an analysis by product in its proposals, as this approach seemed to be the most effective and most suitable when it came to defining the gaps in our knowledge and saying where knowledge needed to be applied to development problems.

However, a series of topics, the horizontal themes which in fact condition the research by product, were taken into consideration so that this research would have the desired effect on economic and social development.

Furthermore, post-harvest technology was dealt with separately because of its importance to the economy of the developing countries, particularly at the level of rural smallholdings. It is thought that, if losses due to poor conservation could be eliminated, the produce saved would feed something like 10% of the world population!

### A.1. Improving agricultural production

A research drive aimed at boosting the growth of food production in the developing countries is still, certainly, one of the prime targets if their poverty is to be diminished and their supplies guaranteed. So the food sector has to be well to the fore. However, industrial crops are, in many of these countries, an essential means of obtaining the foreign exchange they need for their imports and they should not, therefore, be overlooked.

#### A.1.1. Food crops and industrial crops

The programme should support cereals although, of course, without neglecting other food crops.

Research into tubers and root vegetables and into pulses is also considered to be of priority importance. In a first group, a special effort will be made with manioc and the research into leguminosae should involve a certain amount of diversification outside the range of conventional crops.

Research into food production will concentrate on genetic improvements. In spite of the efforts of the international economic community, the potential for genetic improvement is, generally speaking, far from being exhausted in the case of food products. The variety of the problems to be solved means that the European Community is justified in significantly intensifying its contribution to ongoing research (genetic pool, genetic structures of species, increase in existing variety, selection, hybridization etc.).

Although priority certainly has to go to food crops, agro-industrial concerns and export crops also warrant attention - in spite of occasional complaints about serving foreign interests. For developing countries with no natural resources (minerals, energy etc), this is the only source of the foreign exchange that is vital to the development of their economies and, in particular, to the modernization of their food-growing methods.

Furthermore, scientific progress in the Member States of the EEC with industrial crops justifies a continuing research drive in this sector.

Generally speaking, the accent in industrial crops should go on cotton, groundnuts and soya. A second group of crops containing rubber plants and other oleaginous varieties (coconut and oil palms) should also be researched, given the interest these crops present for both the developing countries and the Community.

The priority research topic for industrial crops is similar to the one for food crops, in particular as regards genetic improvements (prospection, genetic pool, selection, hybridization etc).

#### A.1.2. Production of animal protein

Vegetable products form the bulk of the food resources of the Third World. However, they have to be completed by the production of animal protein.

Furthermore, in many developing countries, herding is the only way of using land that is unfit for crops and it is the only activity which brings the populations protein for their diet and income for their trade. Lastly, fishing (river, sea and lake) is the main source of protein in some countries.

Although there are opportunities for specific Community action in these fields, phase one will be confined to the following areas of research.

##### Herding

- Better use of local forage resources.
- Veterinary research (trypanosomiasis, theileriosis, resistance to ticks, cattle plague).

##### Fishing

- Better exploitation of natural fisheries resources by reducing losses after catch and by optimum utilization of secondary species and by-products.

- Fish farming - better use of water surfaces and improvements to tropical species.

The fisheries sector offers interesting research prospects for later programmes, largely because of the extension to 200 miles of the fishing zones - which will now be in the territorial waters of certain tropical countries.

In addition to the actions outlined above, research could be run in the future into the details and the distribution of marketable species and into the development of stocks with a view to defining fishing regulations - which are particularly important now that changes are being made in the law of the sea. For the developing countries, the Community market, which sometimes finds it difficult to get supplies because some of its own stocks are dwindling, is an interesting outlet for fish products.

#### A.1.3. Forestry products

There is a great deal at stake in research into forests tropical woods as far as both the developing countries that produce them and the Community countries that import the raw materials are concerned. The requests for research made by the developing countries vary slightly according to geographical location.

The countries with tropical rainforests have already largely used the potential of their natural forests to bring about a rapid improvement in their balance of payments. More recently, other economic objectives have been defined - the local processing of forestry resources via installation of the relevant industrial branches and the general aim of reconstituting natural resources (which have often been seriously compromised during previous periods of intensive exploitation).

In the dry or arid tropical zones, the development of forestry is in response to heightened concern with self-sufficiency in energy or raw materials (firewood etc). Furthermore, for some years now, it has been clear just how important forests are when it comes to maintaining the natural balance of the factors of agricultural production. Desertification and certain recent climatic episodes (the drought in the Sahel, for example) have led to vast afforestation projects, which need to be evaluated and monitored on a rigorous, scientific basis.

The research topics to be privileged seem to be confined to:

- seeking good sources and evaluating their capacity;
- adopting an integrated approach to the management of the ecosystems of tropical forests and agro-forestry, including desert regions to be reclaimed;
- using tropical forestry products for technology and energy.

#### A.2. Horizontal research topics and the development of the environment

The following research topics, which cover almost all the problems dealt with above, should be given priority.

##### Water resources and utilization

The general problem here is how to rationally adjust these resources to the developing countries' needs - which are expanding because of population growth, rising standards of living, expanding agriculture and rapid industrial development.

The first thing is to improve the way water resources are used, particularly in the arid and desert zones, and to eliminate waste and save and recycle water.

##### The protection, stabilization and restoration of the soil

The soil is the support for all agricultural activity and so the stabilization, preservation and regeneration of it must be considered as priorities.

In addition to the extensive field-work made necessary by the extreme diversity of the ecological conditions, the use of advanced technology (teledetection, for example) might also be envisaged.

##### Protecting the crops

Although more than half the rapidly expanding populations live in the developing countries, these countries only supply 30% of world food production.

The poor productivity of tropical agriculture is partly due to damage by insects and harmful plants (which hit the small farmers, who lack elementary means of combatting them, particularly hard). As an indication, it is estimated that losses due to harmful insects and plants account for more than 40% of the potential cereal



production of Africa and Asia. Many studies of this subject have realized the importance of the problem and the role that research has to play in this field.

The research topics in this sector should deal, as a matter of priority, with a biological, integrated campaign and with the criteria for resistance (including genetic resistance) to disease.

### A.3. Post-harvest technology

This is one of the sectors where a research drive can be of considerable benefit to the developing countries. It is not enough to produce more. The countries have to know how to preserve the products properly and be able to process them so as to make greater capital out of them.

#### Product conservation

Losses after harvesting are very high when there are no proper means of storage - as often happens on rural smallholdings, and they may reach 10% or 15% in rudimentary conditions.

The priority research topics concerned with improving the means of conservation cover:

- the techniques of drying, smoking etc;
- the techniques of storage, particularly protecting products against mycotoxins, parasites etc.

#### Product processing

Within the energy-saving framework, research must try and improve the techniques and yields of processing and capitalize on the sub-products and by-products, in particular for cattle feed and bio-energy.

Research into the design of smaller processing units that can be used by small and medium-sized undertakings also seems to be a priority.

### B. Medicine, health and nutrition in the tropics

This sub-programme is divided into two:

- medicine and health;
- nutrition.

It appeared, in the light of bilateral and multilateral research, that priority in these two sectors should go to activities which do not get enough financing under the present programmes.

## B.1. Medicine and health

Positive results will never be obtained in the fights against transmissible tropical diseases unless a proper balance is established between field studies in the countries concerned and laboratory work of a sufficiently high level. As things stand, most of this work is carried out in the developed countries, with the countries of the Community playing an important part.

In view of the extreme variety of possible actions in this field, four criteria for choosing the main areas of research have been produced. They are:

- the seriousness of the disease and its social and economic effect on the countries concerned;
- the geographical area affected (world, continent, region, scattered spots);
- an evaluation of current scientific knowledge about the diseases and a parallel evaluation of what means are currently available to wipe them out efficiently;
- funds available from other sources (WHO etc).

These four criteria were combined to produce two orders of priority, as follows:

### - First priority

Deadly or seriously debilitating diseases found over a very wide area, in some cases increasingly frequently. They affect or threaten large sections of the population and have a very strong economic and social effect.

Furthermore, research so far has been inadequate to yield methods of fighting the diseases that are reliable and able to be generalized.

### - Second priority

Diseases which, without being deadly, have a major socio-economic effect. Because they are not so serious, some of these diseases have been passed over by research and there are many gaps in our knowledge about them.

The following research topics have been proposed.

## I. Tracing and combatting transmissible diseases

- Parasitology: malaria, trypanosomiasis in humans, onchoseriasis, schistosomiasis, leishmaniasis.

- Bacteriology: sexually transmissible diseases, infectious diarrhoea, tuberculosis etc.
- Virology: haemorrhagic fevers, infectious hepatitis.

The following considerations were borne in mind for each disease:

- (1) Research geared to filling the gaps in our knowledge of epidemiology (the pathogenic agent itself, the vector when there is one, the transmission chain, the symptoms and method of diagnosis, assessment of socio-economic effects, method of control). These vary with the ecological and human environment and with the seasons.
- (2) Research geared to developing ways of controlling the disease. These may tackle the problem at different stages of the chain (control of vectors, vaccination, therapy and integrated approaches involving several methods).
- (3) Research aimed at adapting methods of combatting the disease to the specific constraints of developing countries in the tropics (climate and ecology, economic and financial constraints, organization of public health system and infrastructure, acceptability of therapies and vaccinations offered to the populations).

In implementing this programme, it would be wise to take the real potential of available knowledge and experience into account. Of the utilizable methods (with the exception of operational research), it would appear that, as things stand, the biology of vectors, methods of prevention and immunology offer the greatest chances of success in the campaign to eradicate transmissible tropical diseases.

Success in this field largely depends on a multi-disciplinary approach involving the establishment of a network of cooperation between the institutes, each of which should bring its own knowledge and experience to the programme.

## 2. Mother and child care

This covers research into tropical infantile diseases. Particular emphasis is laid on the detection, etiology and treatment of these diseases, in particular

gastro-enteritis in babies and children.

Any scheme in this field would demand collaboration between a unit situated in the tropics and departments with considerable knowledge of microbiology, virology and tropical child medicine in the Member States.

### 3. Genetics

Studies should cover the following fields:

- genetic factors affecting a predisposition to transmissible diseases and their clinical expression. For example, it has been demonstrated in Egypt that certain HLA types are more susceptible to infection by Schistosoma mansoni (an intestinal form of schistosomiasis);
- the genetics of parasites and their carriers; research into the isolation and characterization of specific mutants;
- new approaches to diagnosis and therapy with a view to combatting common genetic disorders (sickle-cell anaemia and thalassaemia, for example).

Most of the research projects here will demand close collaboration between field units in the tropics and sub-tropics and research units with the requisite knowledge of genetics and immunogenetics in the Member States.

### 4. Environmental hygiene

This has a very strong effect on water-borne diseases such as diarrhoea, malaria, schistosomiasis and certain other infections.

#### B.2. Nutrition

Considerable emphasis has already been placed on the importance of food and nutritional factors on human and economic development. However, in many regions, the only aim of the population is to survive, as the precarious nature of food supplies prevents more ambitious development or precludes participation in the market economy. In other regions, on the other hand, export crops compete with the food crops that would improve supplies.

Two major effects of inadequate diet - poor capacity for work and physiological and mental sequels of malnutrition at critical ages - also restrict initiative and hamper involvement in development operations. Malnutrition also reduces the natural resistance to transmissible diseases and, in certain sensitive groups (women and children), poor diet combined with certain types of socio-cultural behaviour can cause higher mortality and morbidity rates. The combination of malnutrition and diarrhoea is a particularly lethal one in small children.

For these reasons, the scientific approach to the problems of nutrition, with a view to defining methods of prevention and correction, is a general priority objective.

Research into the problems of nutrition in under-privileged environments in the tropics is going on and can be inventoried in at least five of the Member States. It is difficult to say just what has been done because the subjects treated are very wide-ranging. This goes hand-in-hand with relatively weak scientific links. In several countries, the research tends to be carried out on a one-off basis by universities and isolated research workers. So here is a first target for Community action - to strengthen scientific contact, coordinate problems and adopt common methods.

Investigation should cover critical deficiencies due to malnutrition (global protein-energy, vitamin and trace element deficiency).

The production of methods of detection and prevention of the consequences of malnutrition should also be looked into.

Research into food toxicology, i.e. the contamination of food by toxic agents, should also be envisaged.

#### C. Training - an essential aspect of development cooperation

Training is still a fundamental aspect of development cooperation. There is more to it than supplying the tools - people also have to be taught how to use them. So major training actions have been run as part of the Lomé Convention and the Community's agreements with the Mediterranean countries. But in most cases, the training has been what might be called passive. That is to say the developing countries

sent their candidates to the universities, hospitals and laboratories of the European Community to obtain training that in most cases was without any specific objective.

The training proposed under the new programme will, in contrast, be active. The young researchers of the developing countries will be trained on the spot and they will be directly involved in the research activities connected with the various actions undertaken as part of the two sub-programmes.

This new policy should make for greater effectiveness of the research actions and lead to the constitution of national research teams in those sectors that are particularly vital to the development of the countries of the Third World.

What now? - The Commission's framework programme for 1984/87

A step forward has been made with the adoption of a research and development programme especially for the developing countries. This is part of a dynamic movement which began in 1974 and is giving the European Community, as such, an ever-increasing amount of responsibility for running a common research and development policy.

There has just been additional confirmation of this trend - in December 1982, the European Commission adopted, at Vice-President Davignon's instigation, the principal objectives of the scientific and technical strategy that the Community should be applying in 1984/87. After an initial policy debate, these objectives should be approved by the Council of Ministers of the Ten in June 1983.

The Commission has seven main objectives, one of which is the strengthening of development aid through scientific and technical activity. Without wishing to commit itself to figures prematurely, the Commission does think that at least 150 000 000 ECU (1982 value) should be spent on these actions for the developing countries - which would mean almost 40 000 000 ECU for each year of the programme. Bear in mind that the programme that the Council has just adopted provides 40 000 000 ECU over a four-year period and the size of the financial step becomes clear.

The programme would have specific objectives to which a certain percentage of the funds would be allocated. They are agriculture, herding, forestry and desertification (which would get half the monies between them), fishing and fish farming, population and public health, fossil fuels and energy, and the environment.

The programme would be run in the same spirit as the programme which has just been approved, i.e. it would involve dialogue

and contractuality. The research bodies of the Community would be associated with those in the developing countries so as to favourize the development of research structures in the Third World. This will mean that institutes in the recipient countries will have access to Community financing.

The Commission hopes that actions run as part of these programmes will be properly anchored in the specific context of the developing countries, in particular by:

- preserving and capitalizing on tradition technical knowhow;
- supporting and strengthening the existing scientific communities responsible for designing and running actions that generate innovation.

It is on the basis of the paths of action outlined in this document that the Commission of the European Communities proposes to expand and complete the scientific and technical aspects of the Community's development policy. It considers that the success of such a scientific cooperation policy is linked to the possibility of establishing permanent relations between scientists and institutes in the industrialized and the developing countries, with the aim of ensuring rapid and constant development.